Predictors of no-reflow phenomenon among patients with ST-Elevation myocardial infarction undergoing pharmacoinvasive strategy

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Background: Among patients with ST-Elevation Myocardial Infarction (STEMI) undergoing primary percutaneous coronary intervention (PCI), no-reflow phenomenon has been associated with a worse prognosis and survival. Whether factors associated with no-reflow phenomenon are different among patients undergoing PCI as part of pharmacoinvasive strategy is still unknown.

Methods: We conducted a prospective study of consecutive patients with STEMI treated with pharmacoinvasive strategy in a large cardiovascular center in our city. The following factors were assessed at admission and during hospital stay: NTPROBNP>900 pg/dl, troponin>5 µl/l, C-reactive protein >5 mg/l, blood glucose >180 mg/dl, diabetes, ever smoker, GRACE score >140, KillipKimbal score >II, blood pressure >140/90 mmHg, heart rate >90 bpm, total ischemia time >360 min, and first medical contact time >60 min. A logistic regression analysis was performed to identify factors associated with no-reflow phenomenon.

Results: From a total sample of 149 patients that were included, 11 persons presented no-reflow phenomenon. These patients were significantly older compared to those without no-reflow phenomenon (69.5 vs 58.2 years; p<0.001). After age and sex adjustment, GRACE score >140 (OR [95% CI]=4.69 [0.8-26]), a Killip-Kimbal score >II (OR [95% CI]=11.3 [1.3-94]), heart rate >90 beats per minute(OR [95% CI]=3.5 [0.9-14]), and total ischemia time >360 min (OR [95% CI]=4.9 [0.95-25.2]) marginally increased the odds of no-reflow phenomenon.

Conclusions: Worse severity indexes scores, increased heart rate and longer total ischemia time were associated with an increased risk of no-reflow phenomenon occurrence after pharmacoinvasive strategy reperfusion.